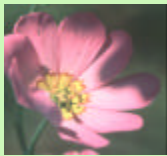


This project was funded by:



**Massachusetts Executive Office
of Environmental Affairs**

December 2003



South Coastal Watershed Regional Open Space Plan



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Section 1: Introduction

1.1 Project Purpose

GeoSyntec Consultants was contracted by the Massachusetts Executive Office of Environmental Affairs (EOEA) to develop a Regional Open Space Plan for the South Coastal Watershed and provide open space planning technical assistance to the eighteen municipalities (see *Figure 1 on next page*) that are located either entirely or partially within the South Coastal watershed.



Green Harbor, Marshfield

This project provided a unique opportunity for watershed communities to work cooperatively towards prioritizing regional open space and recreational land acquisition and protection goals. EOEA seeks to achieve consistency in the open space planning goals of the municipalities within the watershed, and to remove or reduce potential conflicts between individual town plans. Through development of this regional open space plan, the participating communities will receive additional prioritization to obtain open space acquisition funds from state funding sources.

As described below in Section 1.2, GeoSyntec served as technical consultant and facilitator for a planning process that was structured around local participation and input from a Regional Open Space Planning Committee (ROSPC). The three primary goals of this regional open space planning project were:

- **Promote Regional Open Space Planning Cooperation and Consistency:** Through development of this Regional Open Space Plan, the most important goal of this project was to foster consistency and a regional perspective in the open space planning goals of the municipalities within the watershed.
- **Open Space Mapping Update:** A critical component of this project was the process of creating a variety of updated, parcel-based digital maps that can be used as open space planning tools on both a regional and municipal level. By creating these maps in a Geographic Information System (GIS) format that conforms to EOEA standards, all communities in the watershed will have open space information mapped and stored in a consistent format that is easy to (1) update, (2) transfer between communities, and (3) present and review in a regional context.
- **Promote DCS-approved Municipal Open Space Plans for Entire Watershed:** As a separate but integrally related part of this project, GeoSyntec was also contracted to provide assistance to nine communities in the watershed that did not have a current open space plan (OSP) approved by the Division of Conservation Services (DCS) as of January 2003. To assist these towns in updating their expired or incomplete plans, GeoSyntec, in cooperation with our subcontractor BSC Group Inc., provided each town with (1) an updated set of open space maps and (2) an open space plan template that included sources of recommended and DCS-required information, including web links, telephone numbers and other sources. Updated town-specific information from these sources (i.e. recent census data, town lists of rare/endangered species, etc.) was provided to each town along with the OSP template and updated DCS-required maps.

South Coastal Watershed Communities



Legend

- South Coastal Watershed
- Town Boundaries

0 6,000 12,000 24,000 Feet

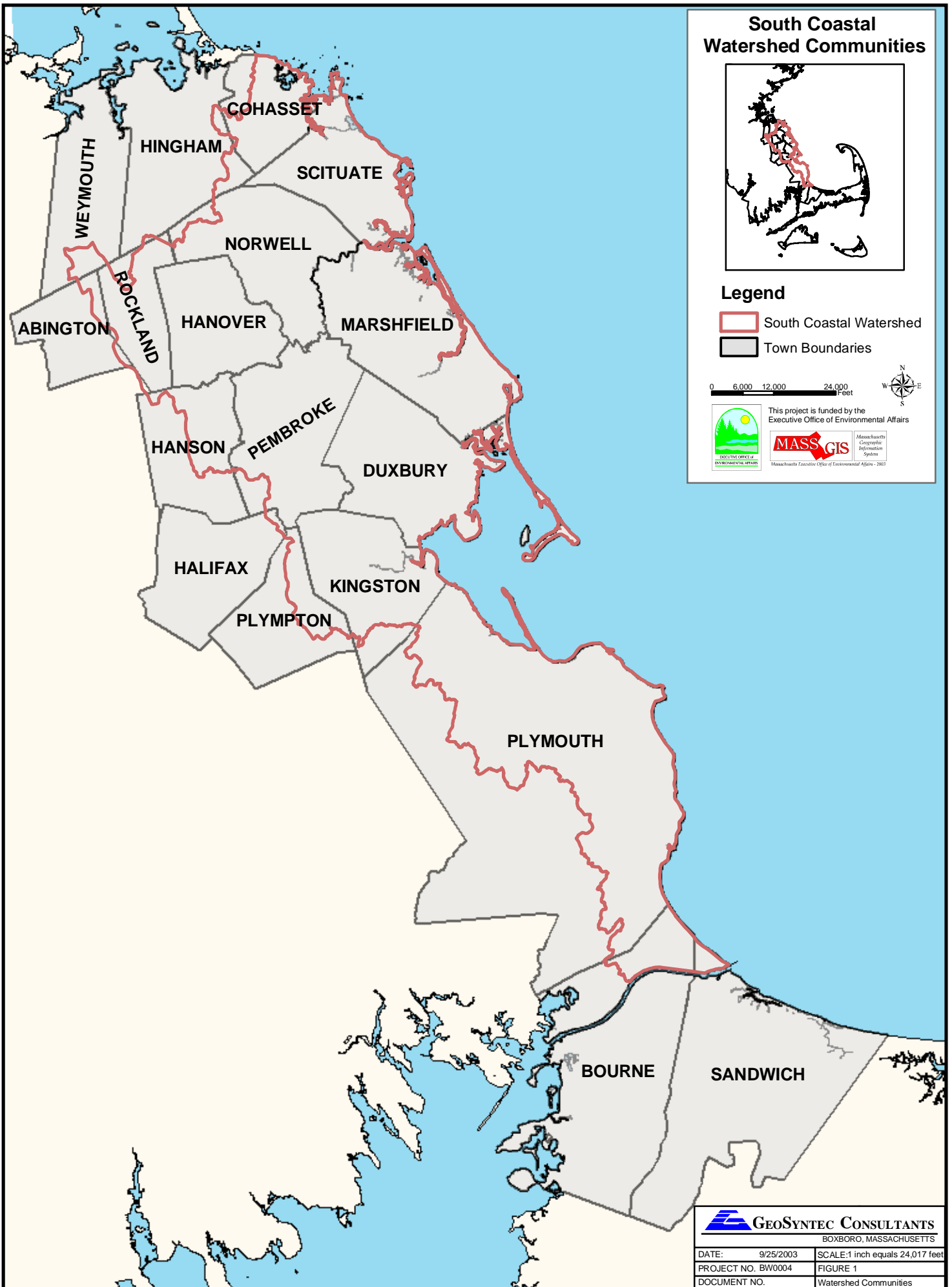


This project is funded by the
Executive Office of Environmental Affairs



Massachusetts
Geographic
Information
System

Massachusetts Executive Office of Environmental Affairs - 2003



 **GeoSYNTEC CONSULTANTS**
BOXBORO, MASSACHUSETTS

DATE:	9/25/2003	SCALE:	1 inch equals 24,017 feet
PROJECT NO.	BW0004	FIGURE	1
DOCUMENT NO.	Watershed Communities		



1.2 Regional Open Space Planning Process

In cooperation with EOEA staff, GeoSyntec conducted outreach to municipalities and other stakeholders in the South Coastal Watershed, inviting representatives from the watershed to participate on a Regional Open Space Planning Committee (ROSPC). George Zoto, former EOEA Watershed Team Leader for the South Coastal Watershed, played an important role in identifying potential local representatives and recruiting key watershed stakeholders for participation in the ROSPC.



Northern Red-bellied Cooter

To begin the process of forming the ROSPC, a letter was sent to municipal leaders (Boards of Selectmen, Town Administrators, Town Planners, etc.), which described the project and invited local Open Space Planning Committee members, Conservation Commissioners, Town Planners, and other interested parties to participate in this regional open space planning process. To ensure representation from all watershed communities, each town was requested to appoint at least two members to the ROSPC. Participation by additional representatives was encouraged. Committee participation was also directly requested of other key watershed stakeholder organizations, including the Wildlands Trust of Southeastern Massachusetts, Jones River Watershed Association, Manomet Center for Conservation Sciences, the Old Colony Planning Council, etc.

After the community representatives to the ROSPC were appointed, a series of five Committee planning sessions were held at the Wildlands Trust office in Duxbury between January 8, 2003 and May 29, 2003. GeoSyntec facilitated these meetings, during which the Committee developed the regional open space planning priorities and action items described in Section 3 of this Regional Open Space Plan.

Regional Open Space Committee Planning Sessions

January 8, 2003

March 20, 2003

April 10, 2003

May 8, 2003

May 29, 2003

A contact list of Regional Open Space Planning Committee members and other key municipal planning contacts is provided as Appendix 9 to this report.

1.3 South Coastal Watershed Communities

The original Request for Responses for this project identified sixteen watershed communities to be included in the regional open space plan. At the request of the EOEA project manager, GeoSyntec agreed to include Weymouth and Abington (both with a small percentage of land area in the South Coastal Watershed) to the study at no additional cost to the project. The eighteen towns included in this regional planning project included all towns that were located either entirely or partially within the boundary of the South Coastal watershed.

South Coastal Watershed Towns

Abington	Marshfield
Bourne	Norwell
Cohasset	Pembroke
Duxbury	Plymouth
Halifax	Plympton
Hanover	Rockland
Hanson	Sandwich
Hingham	Scituate
Kingston	Weymouth

Of the eighteen towns, four are located entirely within the watershed (Duxbury, Hanover, Marshfield and Scituate). Six others are predominantly (>50% of land area) located within the



watershed (Cohasset, Kingston, Norwell, Pembroke, Plymouth and Rockland). The remaining eight towns are predominantly in several other watersheds, including the Cape Cod Watershed (Bourne and Sandwich), the Boston Harbor Watershed (Hingham and Weymouth), and the Taunton River Watershed (Abington, Hanson, Halifax and Plympton).

A summary description of the eighteen South Coastal communities is provided below, excerpted and adapted from the Community Profiles provided by the towns to the Massachusetts Department of Housing and Community Development (DOHCD) (*full Community Profiles and additional municipality information may be accessed at <http://www.state.ma.us/cc/>*).

Abington is a community of 13,000 people located 12 miles south of Boston. Although the town's roots in manufacturing and agriculture have given way to a primarily residential community character, several small and medium size businesses still flourish in this quiet town. Founded in 1712, Abington retains a great deal of open space and a rural character despite experiencing substantial growth over the last several decades. Residents believe that future growth will be spurred on when the Old Colony Railroad, which will connect the town to Boston by rail, is reactivated. In addition, the town will have a new commuter rail station. While optimistic about future development, the town is firm in its desire to maintain its current character and quality of life.

Bourne is a medium-sized rural community at the gateway to Cape Cod. The Cape Cod Canal bisects the community, with both the Bourne and the Sagamore bridges, and the lift railroad bridge all located in Bourne. The canal is well known for its superb sport fishing, and as an important watercourse for shipping and recreational boating. The Bourne Scenic Park campground is located beneath the Bourne Bridge, providing recreational and vacation opportunities for those seeking to enjoy the canal. Bourne has numerous quiet harbors and inlets for boating, bathing and shellfishing. Bourne is a quiet community without the summer tourist crush experienced by some of the other Cape communities.

Cohasset, founded in 1614, is a predominantly residential community located 25 miles from Boston. What began as a farming village turned into a seafaring town in the 1800's, until the fishing industry waned in the early 1900's. Many residents commute to work by bus, car or commuter boat from adjoining Hingham. Route 3a bisects the town and provides a center of commerce for large and small businesses. Cohasset's central village lies around a spacious common with a small pond. The town has active Community and Arts Centers, three historical museums and the South Shore Music Circus. The town has two beaches and the recreational facilities of Whitney Woods Reservation, Thayer Woods and Wompatuck State Park. Along the shores of Cohasset Harbor are facilities for dining, sailing and a replica of the famous Minot's Light. There are ongoing plans to improve the waterfront area.



Whitney Woods Reservation, Cohasset

Duxbury is a coastal community 33 miles south of Boston in Plymouth County. The Town was a center of shipbuilding until the mid-nineteenth century when ships became too large for the shallow bay. Many historic and beautiful homes from Pilgrim times and



the shipbuilding period still exist. Formerly a rural and summer community with an economic base of fishing and agriculture, Duxbury has become a residential suburb of Boston since Route 3 made daily commuting possible.

Halifax is a pastoral community located in the geographic center of Plymouth County and was first settled in 1669. Early colonists found extensive woods of white and pitch pine, cedar and oak and the first saw mill was built about 1728 to process this lumber. In 1795, Halifax was the site of an early effort to construct a canal between Buzzards Bay and Massachusetts Bay by connecting the Taunton and North Rivers through the ponds of Halifax and Pembroke. During the 19th century, as other communities became increasingly industrialized and Halifax's industries burned or closed, the town's economy shifted back to agriculture and substantial poultry and cranberry production was recorded. The residential character of the town became very pronounced as better roads like Route 106 and Route 58 improved access to the town. In addition, the scattered summer cottage colonies began conversions to year-round housing.

Hanover is a pastoral/suburban community that was settled in 1649 and incorporated in 1727. The town's early economy was based on agriculture and lumbering. By the 18th century, the town had established a sturdy agricultural and industrial foundation, with a wealth of waterpower resources and a shipbuilding complex on the North River. The town was the site of the invention of the first tack-making machine, and making tacks and fireworks were among the town's industries in the later 19th century. These manufacturing jobs brought immigrants from Lithuania and Poland, who established settlements within the town. The most significant post-civil war movement was toward residential subdivision development as the main roads from Brockton and Boston were improved in the 20th century. Residents are proud of the Four Corners Section of Hanover, which retains its authentic period village character.

Hanson is a rural pastoral community incorporated in 1820. Early settlers farmed and lumbered, setting up the first saw mill in 1695 on the Indian Head Brook near the present town hall. There were some early 19th century textile mills in Hanson, as well as shoemakers and lumber mills. Lumbering, making shingles and the cranberry industry dominated the town's economy in the 19th century. In 1912, a huge cranberry packing house was built in Hanson. This, with many later additions, eventually became the national Ocean Spray Corporation. By 1915 there were 21 cranberry growers and 20 poultry farms in a community which has to this day remained significantly agricultural.

Hingham covers an area of 22.5 square miles, approximately 15 miles south of Boston. The town's history is reflected in its many immaculately kept antique houses. Derby Academy, founded in 1784, is the oldest co-educational school in the country and Hingham's First Parish Old Ship Church is the oldest church structure in the country in continuous use as a place of worship. Hingham has created six historic districts which will help the town maintain its unique character in the future. Hingham is proud of its location on the water, and construction of a new harbor park further expands the public use of Hingham Harbor. The



*First Parish Old Ship Church,
Hingham*



acquisition of the South Shore Country Club by the municipality provides additional recreation opportunities for residents while preserving the suburban character of this historic seaside community.

Kingston, a coastal community located about 35 miles south of Boston, was established in 1726. It is principally a residential community with a small number of professional fishermen and cranberry growers. A large proportion of residents are commuters. Early industries in the town were iron casting, forging, ship building and woolen mills. Today, much of the town's commerce centers around retail business, including the Independence Mall with its 100 stores located off Route 3. The town's early history as a part of the Plymouth Colony settled by the Pilgrims has spawned an active historical society that maintains the Major John Bradford House for public viewing and for summer brunches on its lawn. Public lands owned by the town on Kingston Bay and on Great Pond afford recreational opportunities, while summer programs for children are provided by the town's Recreation Commission.

Marshfield, a coastal community 30 miles from Boston, has a yearly population of about 21,000 people which grows to about 40,000 in the summer months. The town has a rich history of over 350 years and is the birthplace and home of Daniel Webster. Marshfield contains 28.5 square miles of land and 3.25 square miles of water. Among the basic services provided to residents are public safety, schools, water and sewer, trash removal, recreation, public library and senior center. The town's water and sewer and trash operations are managed through enterprise funds. Marshfield is active throughout the year with events such as the Marshfield Fair, which attracts visitors from all over the State. The community takes pride in the education it offers its young people, in its sports programs and in its unique environmental beauty both on the coast and inland.



*View from Marshfield to Norwell across
the North River, the first designated
Scenic River in Massachusetts*

Norwell is an affluent suburban community which still retains some of its past rural character. Bounded by the North River, Norwell attracted settlers for its agricultural land and its water power potential. Colonists built grist and sawmills on the river as well as boatyards, and shipbuilding was a major industry until the draft of boats being built outstripped the river's depth.

Poultry farming became the town's largest business and flourished until a virus killed off the flocks, wiping out many producers. Farmers had to sell their land to developers, triggering a period of residential development and growth for the town. A building boom at the end of World War II almost doubled the town's population between 1950 and 1955. Norwell now has a suburban residential character which residents feel has not detracted from its charm as a small, friendly, rural town.

Pembroke is a rural community located approximately 30 miles South of Boston. The town is a convenient commute to Boston to the north and historic Plymouth to the south. With five ponds, Pembroke is able to offer swimming, boating and fishing in the summer and ice fishing and skating in the winter months to residents and visitors. Approaching Pembroke, visitors pass the herring run and the park, a site which brings people from



surrounding areas. Pembroke's picturesque town center features many well-preserved historic buildings.

Plymouth is a coastal community approximately 5 miles north of the Cape Cod Canal. Plymouth has the largest area of any town in the Commonwealth. For most of its existence, Plymouth was an isolated seacoast area where economic fortunes were linked to the sea and shipping. The site of the original 1620 settlement is now a portion of today's Downtown/Harbor District. The South Shore's accessibility to the Boston metropolitan area has greatly influenced the growth rates of its communities. Desirability in terms of land prices, tax rates and residential amenities further influenced community growth and Plymouth's population mushroomed from 18,606 in 1970 to 45,608 in 1990. Also of significance during the period was the development of a healthy industrial and commercial base. The Town of Plymouth is committed to controlling its residential growth while welcoming industrial and commercial expansion.



Curlew Pond, Plymouth

Plympton is a quiet town located 34 miles southeast of Boston and 17 miles southeast of Brockton. Residents say that driving into the center of this Plymouth County town is like taking a step back into simpler times and they wouldn't have it any other way. Two hundred year old houses share space on Route 58 (the main street) with a gas station, a farm stand, a bank, a restaurant and a historic graveyard.

Rockland is an industrial community located 20 miles southeast of Boston. The first settlers were drawn by the rich woodlands of pine and oak and the first mill was in 1703. The town relied on agriculture, timbering and saw milling and shipped large quantities of oak timber to colonial shipyards. In the 19th century, Rockland became a center for shoe production. Trolleys and trains tied the town to Abington, Hanover and Brockton in the 19th century and the town was incorporated in 1874. Most shoe factories closed in the Depression years but intense commercial expansion along Route 123 spurred suburban development. Although Rockland has been an industrial community since the mid-19th century, there are large tracts of town which remain wooded and the town retains a somewhat rural quality.

Sandwich, incorporated in 1639, is the oldest town on Cape Cod. Divided by the Cape Cod Canal, the majority of the town's population and land are on the southerly side of the canal. Sandwich is a mostly residential community with a winter population considerably smaller than its summer population. Sandwich's beaches along Cape Cod Bay stretch for miles and provide a wonderful views of the many vessels that pass through on their way to or from the Boston area. Historic Sandwich Village is a world-renowned tourist destination, providing a glimpse into New England's rich colonial history. Heritage Plantation, Sandwich Glass Museum, the Thornton Burgess Museum, Hoxie House (the oldest house on Cape Cod), Dan'l Webster Inn, Dexter Grist Mill and various art galleries, rare book and antique stores are some of the attractions which bring visitors to Sandwich from all across New England and the world.



Scituate is a small to mid-sized seacoast community located equidistant between Boston (25 miles) and Plymouth. The Town offers a pleasant mix of rural, suburban and coastal community features. In the 375 years since its incorporation, it has evolved from a summer colony to a residential community but has retained some of the flavor of its past. Ocean-related recreational activities make it a very desirable place in which to live and to raise families. Commercial activities in Scituate are focused in three business areas and the Town Pier which accommodates a working fishing fleet. Historic points of interest include: Scituate Lighthouse, The Old Oaken Bucket Homestead and Well, The Lawson Tower, Stockbridge Mill, the Cudworth House, and the Little Red School House which is the home of the Scituate Historical Society.

Weymouth is the second oldest town in the Commonwealth, behind Plymouth, and the site of the first town meeting. Established in 1622 and incorporated in 1635, the town was a fishing and agricultural community for almost two hundred years. Today, Weymouth is primarily a residential suburb of Quincy and Boston, a bedroom community south of Boston on well-sheltered Hingham Bay. Route 3, which runs through the heart of the town, provides direct connection to Boston and to Route 128. As a result of the proximity to these highways, new areas for business and industry have developed. As a coastal community, Weymouth offers many recreational opportunities. The town offers an extensive program in water safety and swimming instruction at Wessagusset Beach and at Whitman's Pond. Boaters enjoy the waters of Quincy and Hingham Bays.



*Aerial view of the Hingham Shipyard
and Weymouth's Fort Point*



Section 2: Overview of Existing Regional Open Space

2.1 Municipality Open Space Mapping Update

As part of the regional open space planning process, GeoSyntec updated the inventory of current open space parcels for the 18 towns in the South Coastal watershed and produced updated open space parcel maps. A preliminary set of maps, based on available MassGIS datalayers was distributed to the Committee members at the ROSPC kickoff meeting.

In an effort to both update the open space data for the region and increase its accuracy, digital parcel data in ArcView or AutoCad format was requested (if available) from each of the communities for use in the open space updating process. GeoSyntec received fully digital data from 10 out of 18 of the south coastal communities with 2 delivering partial digital coverage. The purpose of using available digital parcel boundaries was to improve the spatial resolution of the open space layers. The existing open space layers available from MassGIS were very coarse and were often either the wrong shape or had property boundaries that were in error by hundreds of feet or more.

All collected datasets were first converted into the MassGIS coordinate system (Massachusetts State Plane NAD83 meters). Using the existing MassGIS open space layer, each corresponding parcel was assigned a MassGIS Open Space Identification Number (OSID) to allow the attributes to transfer to the new polygons. Next, using maps from Open Space plans, parcel data provided by the Towns, the Metropolitan Area Planning Council, and the Nature Conservancy parcels were added to the file. These newly compiled data sets were printed and delivered to community representatives on the ROSPC for review and comment. To assist in reviewing and updating the draft maps, ROSPC representatives were supplied with an updated map, a table for recording updated or revised open space parcel attributes, and a MassGIS data dictionary with the descriptions and codes for the key fields used by MassGIS to describe the open space parcels (i.e. Site Name, Status Fee, Fee Owner, Primary Purpose, Public Access, Level of Protection, etc.). Updates and revisions submitted to GeoSyntec were then incorporated into each town's open space datalayer. If no updates were submitted, the layers were considered complete.

It is important to note that the mapping process described above resulted in a regional open space parcel map with two resolutions. Towns with digital parcel files had the locations of existing open space parcels spatially corrected while those without digital parcel files did not. Similarly, new or updated parcel information mapped through this project is spatially accurate for towns with digital parcel files and is approximated for towns without digital parcel files.

Copies of the eighteen updated municipal open space files are included as Appendix 10 (submitted in digital format on CD-ROM) to the report.

2.2 Regional Open Space Maps

In addition to the updated open space parcel maps described above, GeoSyntec also produced a series of regional maps to assist the Regional Open Space Planning Committee in identifying the regional open space priorities and action items discussed in Section 3. All maps were presented in draft format to the reviewed by the committee on during planning sessions. Each of the eight maps described below are included as appendices to this report.



1. Regional Zoning: The regional zoning map consists of a compilation of generalized municipal zoning layers obtained from MassGIS. Because of (1) slight variations in zoning categories for each town and (2) the desire to depict regional zoning patterns in a consistent format that is easy to view and understand, GeoSyntec created this map using the following five generalized zoning categories:

- Residential
- Commercial
- Industrial
- Conservation
- Other

2. Regional Soils: This map is a compilation of soils data from the Natural Resources Conservation Service (NRCS), soils maps from existing municipal open space plans, and surficial geology layers available from MassGIS. The soil classifications and degree of detail provided in these source maps varied significantly.

3. Unique Features: Unique features for each Town were compiled from previously completed municipal open space plans, MassGIS state layers (Historical Places, Scenic Areas, and Historic Districts) and assistance by Community representatives on the ROSPC. Other features included on this map are scenic viewpoints and scenic road segments. It is obvious from this map that some communities provided more information and input than others during the map review and revision process.

4. Water Resources: This map consists of water resources features readily available from MassGIS, including:

- Major river basin and sub-basin watershed boundaries
- Rivers and streams
- Lakes and ponds
- Wetlands
- Public water supplies and their Zone II wellhead protection areas
- Flood zones (100-year and Velocity Zone)
- Outstanding Resource Waters

5. Wildlife Habitat / Ecological Resources: This map consists of wildlife habitat and ecological resources features readily available from MassGIS, including:

- Certified and Potential Vernal Pools
- Anadromous Fish Runs
- Priority/Estimated Habitat for Rare Wildlife Habitat
- Areas of Critical Environmental Concern
- Barrier Beaches,
- BioMap Core Habitat/Supporting Natural Landscapes
- 100-foot Undisturbed Riparian Zones

6. Regional Buildout Map: This map provides a regional composite of the build-out analyses (from MassGIS) for each town in the South Coastal watershed. This



information was developed as part of an EOEI initiative started in 1999 to provide a build-out map and analysis for all 351 Massachusetts municipalities. A build-out analysis is a series of GIS-based maps that illustrate a community's current zoning, the land available for development and how it is zoned, and maximum development possible in a particular community if every piece of developable land was developed based on existing zoning. The regional buildout map shows the portions of the South Coastal watershed communities that fall into the following two general categories:

- **Absolute Development Constraints:** This category includes all land that is either (1) currently developed or (2) absolutely constrained from future development. Development constraints on parcels vary somewhat from town to town due to differences in zoning regulations and bylaws, but generally include wetlands, steeply sloped areas, and floodplains. This category also reflects parcels that have permanent legal protection from development.
- **Future Developable Land:** This category includes all currently developable land based on current zoning, which is also defined as all land that does not fall into the "Absolute Development Constraints" category described above.

7. Recreation Map: Passive and active recreation features were inventoried as part of this project by requesting open space committee members to provide locations and descriptions of facilities such as:

- Boat access ramps
- Trails (existing, proposed, and conceptual)
- Open space areas with public access
- Canoe and boating areas.
- Additional sources of information for this map included Public Access Board facilities (from MassGIS) and trail networks within State Forests and Parks

8. Regional Open Space Parcel Map: This map is a regional version of the municipal open space maps updated through this project. To provide the most utility for regional planning efforts with regard to prioritizing land acquisition or protection, the open space parcels were symbolized according to their current level of protection. The five levels of protection shown are consistent with those used in the MassGIS system, as follows:

- **Protection in perpetuity:** parcels with permanent conservation restrictions
- **Temporary protection:** open space parcels with time-limited conservation restrictions and parcels where uses are restricted under Chapter 61, 61A and 61B of the Massachusetts General Laws. Massachusetts law provides for a reduction in property tax assessments for land that is voluntarily maintained in active forestry (Chapter 61), productive agriculture or horticulture (Chapter 61A), or open space and recreational (Chapter 61B) uses.
- **Limited protection:** parcels protected by something other than time.
- **Unknown:** parcels that are known to be protected open space (as listed by a municipality), but for which no additional information is available.
- **None:** no protection



Section 3: Regional Open Space Plan

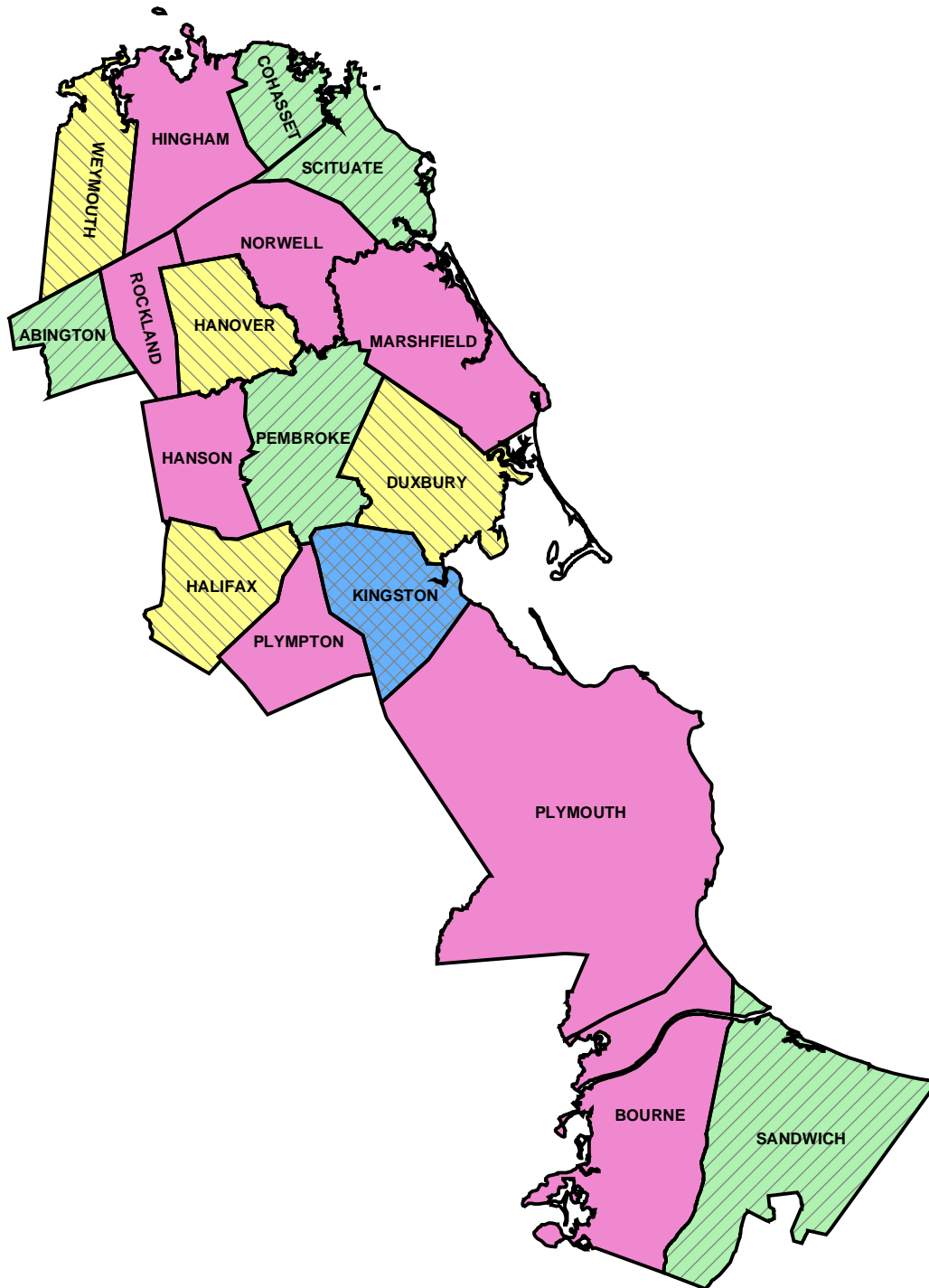
3.1 Individual (Town) Open Space Plans (OSPs)

The original project contract called for GeoSyntec to assist three communities with draft or conditionally-approved Open Space Plans (OSPs), by providing consulting services as necessary to bring the OSPs to completion for approval by the Division of Conservation Services (DCS). At the time of the ROSPC kickoff meeting on January 8th, 2003, nine of the eighteen South Coastal municipalities had an expired OSP, two towns had conditionally approved plans, six towns had DCS-approved plans, and one town (Kingston) had a recently completed plan that was in the process of being reviewed by DCS. Figure 2 on the following page depicts the status of municipal open space plans for these towns.

Members of the Regional Open Space Committee suggested that project funds would be better spent by having GeoSyntec provide a uniform level of assistance to each of the 9 towns with expired OSPs. The committee acknowledged that project funding earmarked for assistance with town open space plans (\$28,000) would not allow for comprehensive OSPs to be completed for the 9 towns. The Committee reached general consensus that preparation of GIS maps was one of the more difficult tasks required for a plan to meet DCS standards, often due to limited access to GIS mapping resources. Committee members also expressed a desire for assistance in developing a uniform OSP format that town OSP committees could use as a template when updating their plans.

Following the January 8th meeting, EOEa and GeoSyntec amended the project contract to re-direct project funds towards providing a set of required maps and an OSP template for the nine South Coastal towns with expired plans. As explained by John Clarkeson (EOEA, Assistant Watershed Manager) at the second ROSPC meeting (March 20, 2003), these contract modifications were approved because EOEa has a strong interest in promoting that every town in the watershed have a DCS-approved Open Space Plan. In return for receiving these services, Mr. Clarkeson asked that each town commit to completing an updated OSP within the next 12 to 16 months.





The set of maps provided by GeoSyntec for each of the nine towns (Bourne, Hanover, Hanson, Hingham, Marshfield, Norwell, Plymouth, Plympton, and Rockland) are consistent with those required in the DCS's Open Space and Recreation Plan Requirements. The OSP templates prepared for these nine towns are also based on and consistent with DCS standards. In addition to providing required OSP maps, the templates also list sources of recommended and required information, including web links, telephone numbers and other sources. Town-specific updated data/ information from these sources (i.e. recent census data, town lists of rare/endangered species, etc.) was provided to each town in hard copy along with the OSP template. GeoSyntec was not responsible for updating written OSP sections or providing/updating information from municipal sources (with the exception of updating parcel-based open space maps). An example open space plan template completed for one of the nine towns (Plymouth), including the set of DCS-required maps prepared by GeoSyntec, is included as Appendix 11 to this report.



South Coastal Open Space Plan Status

Town	Open Space Plan
Kingston	2002 OSP (under DCS review)
Abington	Approved thru 1/06
Cohasset	Approved thru 9/06
Duxbury	Approved thru 3/07
Pembroke	1999 OSP (Approved thru 2004)
Sandwich	1999 OSP (Approved thru 2005)
Scituate	1998 OSP (Approved thru 8/03)
Halifax	1998 OSP (COND ADA 2003)
Weymouth	1999 OSP (COND 2004)
Bourne	1997 OSP (Expired 5/02)
Hanover	1997 OSP (Expired 1/02), Hanover Greenway project (1999)
Hanson	1996 OSP (Expired 11/01)
Hingham	1995-96 OSP (Expired 11/01)
Marshfield	1995 OSP (Expired 9/00)
Norwell	1997 OSP (Expired 5/02)
Plymouth	1996 OSP (Expired 6/01), 1999 Open Space Corridor Plan
Plympton	1988 OSP (Expired 1993)
Rockland	Expired (1997 Draft Natural/Open Space/Recreational Resources)

Legend

-  Under DCS Review
-  Approved
-  Conditional Approval
-  Expired



GIS Data Provided by MassGIS



GEOSYNTEC CONSULTANTS

BOXBOROUGH, MASSACHUSETTS

DATE:	11/26/2003	SCALE:	1 inch equals 6 miles
PROJECT NO.	BW0004	FIGURE NO.	1
DOCUMENT NO.		FILE NO.	plan_status.mxd



3.2 Regional Open Space Planning Categories

At the kickoff meeting of the ROSPC on January 8, 2003, the Committee discussed the process of developing a Regional Open Space Plan and debated the establishment of regional open space planning priorities. The Committee reached consensus on modifying the seven regional open space planning categories listed by EOEA in the project scope of work. As originally stated in the project scope, these priorities were to identify and recommend municipal and inter-municipal opportunities and strategies for preserving and protecting regionally important: (a) water supply resources; (b) wildlife habitats (c) regional greenways and trails, (d) conservation areas and forests for future acquisition, (e) scenic landscapes and resources, (f) recreation (g) historic and cultural resources. The scope also called for establishing consensus on a watershed-wide protected acreage goal.

The modified list of priorities, which was used to focus the discussion of regional goals and action items in future Committee meetings, was established by the Committee as listed below. The Committee also unanimously decided not to pursue establishment of a target protected acreage goal for the watershed as part of this regional planning process.

South Coastal Watershed Regional Open Space Planning Categories

Develop goals and recommended actions to identify, preserve and protect regionally significant:

- Coastal Resources
- Inland Water Resources (Surface and Groundwater)
- Wildlife
- Scenic, Historic and Cultural Resources
- Passive Recreation
- Active Recreation

3.3 Regional Open Space Planning Priorities

The Committee worked over the course of four meetings toward reaching consensus on priority goals and recommended actions (5-year) for regional open space planning. After reviewing a set of regional maps prepared by GeoSyntec, discussion was organized around the six categories listed above. The Committee initially worked to establish a regional consensus on broad goals and actions, and then work toward more specific recommendations at later meetings.

The Committee voted (by a show of hands) on establishing “High Priority” bullet items in each major category listed below. Each Committee member was given 2 votes within each category, and the 2 items with the highest vote totals in each category were given “High Priority Status”. The vote totals for each item are shown in parentheses on the following page, with high priority items in bold red text.



South Coastal Watershed Regional Open Space Planning Priorities

Coastal Resources

- **Habitat protection, with focus on habitat areas identified by the Natural Heritage and Endangered Species Program (NHESP) and supporting adjacent habitat areas (9)**
 - ***“All coastal BIOMAP areas should be protected”***
- **Promote coastal planning (7)**
- Improve Identification and public awareness of coastal points of access (3)
- Improve and pursue acquisition of scenic vistas (0)
- Pursue improvements to linear shoreline access (0)

Inland Water Resources (Surface- and Groundwater)

- **Protect both *existing* and *potential* water supplies through: (10)**
 - **Zoning**
 - **Aquifer overlay districts**
 - **Acquisition**
- **Priority wetland preservation and restoration (wildlife habitat) (9)**
- Investigate feasibility of acquiring (possibly by eminent domain) vacant, undeveloped parcels adjacent to rivers (3)
- Pursue improvements to lake, pond and river access (0)

Wildlife

- **Identify and protect habitat corridors and linkages (“habitat areas”) (8)**
 - Identify habitat corridor barriers and key inter-town connections
 - Identify regularly used hunting areas
- **Land acquisition for habitat protection (5)**
 - Use BIOMAP for parcel prioritization/rankings
- Promote vernal pool: (4)
 - Certification/mapping
 - Awareness, adequate buffer zones
 - Land acquisition for habitat protection
- Promote protection of NHESP-listed species (i.e. regionally significant population of Northern Red-bellied Cooter) (2)
- Promote estuarine, shellfish and finfish habitat (using available data sources from NOAA, CZM, Massachusetts Division of Marine Fisheries, etc.) (1)
- Promote multi-town habitat restoration efforts (1)



Scenic, Historic & Cultural Resources

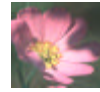
- **Identify and protect historically and culturally significant sites and trails (8)**
 - **Promote cross-town self-guided historical/cultural trails and tours**
- **Protect/save working and historic farms (6)**
- Protect old-field habitats, promote proper management (frequency/timing of mowing, etc.) (2)
- Designate scenic roads (cross-town designations) (2)
- Promote open space protection in historic districts (1)
- Identify removable visual barriers and assess feasibility of removal (0)

Passive Recreation *(Note: Three high priority items were selected for this category)*

- **Promote inter- and intra-town connections for existing trail systems: (9)**
- **Promote public access (i.e. new access points, improved ID/public awareness) to: (9)**
 - **Swimming**
 - **Fishing**
 - **Boating**
 - **X-C skiing, snow-shoeing**
 - **Birding sites**
 - **Etc.**
- **Promote development of nature/self-guided trails (i.e. Quest Trails) (5)**
- Protect logging roads and existing trails (including abandoned rail lines) (4)
- Promote “environmentally friendly” golf course management (i.e. signage in environmentally sensitive areas) (4)
- Promote use compatibility (and restriction compatibility) for connected trail systems (2)
- Promote community gardens (1)
- Identify utility easements for potential trail linkages (0)
- Use a consistent trail marking system and signage *(By mistake, this item was not voted on.)*

Active Recreation *(Note: No voting on this category because only 2 items were listed)*

- **Promote “directed use” of motorized recreational vehicles (ATV’s, dirt bikes, snowmobiles, jet-ski’s, etc.)**
- **Encourage the use of hardy species for sports fields, to reduce the need for intensive watering**



3.4 Regional Open Space Action Plan

Using the regional open space planning priorities (listed above) as a framework, the Committee developed a list of specific high priority areas for action to be highlighted in this Regional Open Space Plan report as part of a five-year plan. The Committee acknowledged that it would not be feasible to develop a comprehensive catalog of all priority actions in all 18 communities of the South Coastal region (due in part to uneven participation by the 18 communities in the planning process). As such, the list of high priority actions is intended to serve as a representative set of examples that reflect the range of regional open space planning priorities established by the Regional Open Space Committee.

To assist the planning process, a listing of selected priorities from individual town open space plans (and related planning documents) was distributed as a source of ideas. The specific action items identified by the Committee are as follows:

South Coastal Watershed Regional Open Space *ACTION PLAN*

Coastal Resources

- Protect all remaining eel grass beds
- Use NOAA and CZM maps (i.e. Environmental Sensitivity Map, listing all “special resources”) for coastal planning efforts
 - Investigate/promote regulation of recreational watercraft to protect sensitive coastal areas (i.e. eel grass beds and other “special resources”)
- Inventory migratory species to prioritize key habitat protection areas
- Protect all salt marshes and barrier beaches
- Protect fish runs...mitigate/prevent impacts from dams, barriers, tidal restrictions, etc.
- Protect shellfish beds
- Promote regulations to protect coastal environment from oil spills (double-hulled tankers, etc.)
- Promote no-discharge zones
- Conduct regular monitoring for illegal discharges at stormwater outfalls
 - Disseminate information on who to contact if illegal discharge is suspected (Harbor Master, DEP, etc.)



Salt marsh bordering the Jones River, Kingston

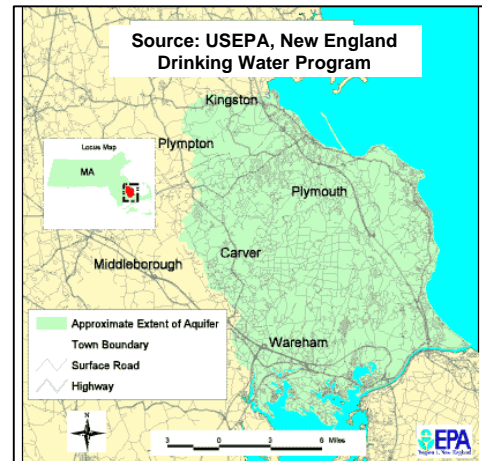


Confluence of the North and South Rivers, Marshfield



Inland Water Resources (Surface- and Groundwater)

- Regionally important water supply resources that should be a priority for coordinated protection include (but are not limited to):
 - Plymouth/Carver Aquifer
 - Upper Cape Sole Source Aquifer
 - Silver Lake
 - Monponsett Ponds
 - Furnace Pond/Oldham Pond complex
 - Accord Pond/Accord Brook
- Third Herring Brook (Hanover/Norwell): protect corridor for water quality protection
- Jones River: protect river corridor for water quality protection
- Identify and inventory cranberry bogs, develop prioritized plan for cranberry bog acquisition
 - Avoid reversion of cranberry bogs to uplands (and associated development potential)
 - Promote appropriate regulations for use of herbicides and pesticides in cranberry bogs
- Display information on NPDES permits and 21E sites, etc. in Town Hall, Library, etc.
- Inventory and name all perennially flowing “Rivers” (as defined under the MA Wetlands Protection Act) and associated setbacks.
- Encourage development of wetland by-laws and promote regionally consistent wetland by-laws (share and compare by-laws among towns).



Plymouth/Carver Sole Source Aquifer



Cooks Pond, Plymouth



Wildlife and Fisheries

- Many fish ladders/fish passages are in disrepair...a regional plan is needed for their upgrade and maintenance.
- Jones River corridor: important connection to Bay (anadromous fishery)
 - Restore native brook trout throughout river
- Silver Lake: restore alewife fishery from Bay to Silver Lake
- Protect/preserve the North River: entire corridor in BIOMAP, MA Wild & Scenic River
- Use BIOMAP, Visual Species of Massachusetts database, etc. for parcel acquisition rankings...promote a more coordinated approach to parcel acquisition that fully integrates the habitat needs identified in these inventories.
- Promote municipal/regional cooperation with the MA Division of Marine Fisheries (DMF)
 - The MA DMF should develop a regional fisheries action plan.
- Hanover/Rockland town line (south of Summer St.): high priority potential acquisition for habitat protection...privately-held 500-600 acre parcel
- Consider regulations requiring a wildlife evaluation *prior to* site development (Planning Board process)
- Burrage Pond Wildlife Management Area (Hanson/Halifax): adjacent parcels are key for acquisition (Poor Meadow/Burrage & Monponsett Corridor)
- Vernal pool identification and certification should be promoted.
- Hingham/Abington/Weymouth/Rockland - Naval Air Station wildlife corridor: Identify, bound and prioritize a corridor protection plan
- Municipal and DEM coordination on expansion and linkages with Wompatuck State Park
- Protect coastal plain pond areas (i.e. Great South Pond)
- Norwell/Scituate – First Herring Brook: parcel acquisition for habitat protection
- Whitton Woods area (connects Marshfield and Duxbury): parcel acquisition for habitat protection



Native Brook Trout
Salvelinus fontinalis



Marbled Salamander
Ambystoma opacum



River Otter
Lutra canadensis



Scenic, Historic & Cultural Resources

Identify and protect historically and culturally significant sites and trails:

- Protect/preserve Bay Circuit Trail sites of historic/cultural significance (i.e. Indian Crossway at Great Cedar Swamp)
- Protect/preserve the 1620 Pilgrim Trail (a.k.a. Green's Harbor Trail)
- West Harbor Branch of Old Colony Line (Abington to Hanover): rail trail project
- Wampanoag Canoe Passage



Stetson House, Hanover

Protect/save working and historic farms:

- County Farm (Plymouth)
- Pohorecky Farm
- Town Forest/Plymouth County Hospital/Oertel Farm (50-80 acre parcel)
- Makepeace Cranberry Co. property
- Cranberry bogs – preserve to maintain regional character
- Protect farms as working, food-producing lands...acquire lands with good soil



Cranberry Bog, Plymouth

Scenic Road Designations:

- Route 6A (Old Kings Highway) from its beginning in Sandwich
- Sections of Route 106
- Old Sandwich Road (Plymouth)
- Ring Road sections (Kingston-Plymouth)
- Route 3A south of Plymouth center
- First Parish Road (Norwell)
- Scenic road corridor connecting the following:
 - First Parish Road (Norwell)
 - Nantasket Avenue to Rt. 228 (Queen Anne's Corner)
 - Jerusalem Road (Cohasset)
- Broadway (Hanover) to River Street (Norwell)
- George Washington Blvd. (Hingham/Hull)



Two-Mile Farm, Marshfield



Passive Recreation

Promote inter- and intra-town connections for existing trail systems:

- Complete Bay Circuit Trail corridor
- Promote Bay Circuit Trail connector trails
- Complete the Hanover Greenway trail, including the linkage of 8.5 miles through Hanover, connecting the trail to Rockland, and connecting to Pembroke at Luddam's Ford.
- Andruk/Edgewood parcels (Hanson/Pembroke): these parcels would allow relocation of the Bay Circuit Trail off of a very busy area of Route 114
- Connect Rockland Town Forest to Naval Air Station property and associated linkages to trails in Weymouth, Abington, Rockland and Hingham
- Connect Ellisville Harbor State Park to Myles Standish State Forest
- Develop trail corridor connecting: Downtown Plymouth (Pilgrim Trail) to Morton Park to Town Forest to Myles Standish State Park
- Connect the Hanover Branch Railroad to existing Hanover trails (would allow Rockland access to Hanover trails)
- Connect Great Esker Park (Weymouth) to Bare Cove Park (Hingham), possibly by a boardwalk.
- Bay Circuit Trail link: Duxbury through Pembroke
- Cohasset, Hingham, Scituate: Build a rail trail if the Greenbush line is not reconstructed.
- Wampanoag Canoe Passage
- Weir River Estuary Park (Cohasset, Hull, Hingham)
- Build Plymouth Waterfront Rail Trail and connect it to Kingston trails.
- Develop regional kayak trail along the coast, including marked stopping points
- Cut River (tidal): potential kayak trail, historic canal built in the 1600's



Myles Standish State Forest



Southern terminus of the Bay Circuit Trail, overlooking Kingston Bay

Promote Public Access:

- In Pembroke, east of where Robinson's Creek crosses Rt. 139, improve accessibility and public awareness of the existing cement boat ramp (suitable for trailered boats).
- The North River needs improved public access



- Promote a “regional brand” for public access sites (signage logo, etc.)
- Fencing currently blocks shoreline walking near North Beach in Hingham, although it is possible to get to the water. This is a public access issue that should be addressed through the framework of Chapter 91 of the Massachusetts General Laws.
- Promote “shared use trails” for biking, hiking, cross-country skiing, etc.
- Designate cross-town bike trails

Promote development of nature/self-guided trails:

- Integrate trails with local schools as an educational resource (i.e. NatureNet, PCIS-Cooks Pond Trail, Hanson Middle School-Little Cedar Swamp)
- Promote nature /self-guided trails at:
 - Myles Standish State Park
 - Ellenville Harbor State Park
 - Bay Circuit Trail
 - Self-guided water trail (i.e. regional kayak trail, Wampanoag Passage)
 - Northland site (Hanover/Halifax)...good site for cedar swamp education



Ellenville Harbor State Park

Promote Community Gardens:

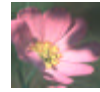
- Plymouth County Farm represents a great opportunity for public gardens

Active Recreation

- Promote “directed use” of motorized recreational vehicles (ATV's, dirt bikes, snowmobiles, jet-ski's, etc.)
 - Direct use towards private property trails which charge use fees and carry insurance that covers use of motorized recreational vehicles (i.e. Carver site)
 - Wompatuck State Park as regional magnet for snowmobiles
 - Use of motorized recreational vehicles (snowmobiles, dirt bikes, etc.) on town-owned properties is both a legal liability and law enforcement issue for towns. If towns acknowledge and allow this activity on town-owned trails, they become liable in the case of accidents and related injuries. However, active restriction of recreational vehicles from trails is difficult to enforce and places

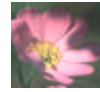


Wompatuck State Park: A regional magnet for snowmobiles (permitted on portion east of Union Street)



a time-intensive burden on town police. The ROSP committee discussed the feasibility of having municipally-managed areas for recreational vehicles where a user fee would be charged to cover insurance costs, site maintenance, etc. (similar to the privately run site in Carver mentioned above). Most members of the committee felt strongly that municipalities would be highly unlikely to pursue this type of enterprise due to the legal liability issues involved. However, the committee also agreed that unregulated motorized vehicle use on public trails was a serious and growing problem in the region. Although no consensus could be reached on how to address the issue, it was agreed that the issue warranted discussion in this regional open space plan and should be further addressed at both the municipal and regional planning level.

- Encourage the use of hardy species for sports fields to reduce the need for intensive watering.
- Promote development of skateboard parks, which provide a safe and structured environment for this activity.



Section 4: Summary of Findings and Recommendations

1. The maps, regional planning priorities and action items developed through the regional open space planning process should be used as a tool to guide and prioritize municipal open space planning decisions, and should be reflected in the municipal open space plans.
2. The committee-based planning process used for this project was successful in establishing and achieving consensus on regionally significant open space planning issues. This process is transferable to other watersheds.
3. The specific action items listed in Section 3 of this Regional Open Space Plan (ROSP) are not intended to represent a comprehensive listing of potential regional open space planning actions within the 18 municipalities of the South Coastal Watershed. However, through the committee-based process, the ROSP represents a regional consensus on priority issues, goals and a cross-section of representative action items that can be used as a guide for open space planning in the region.
4. GIS mapping and access to updated parcel data are continuing challenges for communities when updating municipal open space plans. Many representatives to the South Coastal Watershed Regional Open Space Committee expressed the opinion that the mapping updates developed for their town as a result of this project were both badly needed and a valuable asset to future municipal open space planning efforts.
5. Digital parcel data is critical to the process of updating and storing parcel information for open space planning. Many towns do not have digital parcel data readily available. Initiatives promoting statewide completion of digital parcel data layers should be supported.